

WHAT IS CLAIMED IS:

1. A discontinuous position detecting device for detecting an actual discontinuous position between recording contents recorded on a recording medium, comprising:

5 a scanning unit that scans the recording medium in a first direction and in a second direction that is different from the first direction;

a first detecting unit that detects a temporary discontinuous position located in a vicinity of the actual discontinuous position while the scanning unit scans the recording medium in the first direction;

10 a second detecting unit that detects the actual discontinuous position while the scanning unit scans the recording medium in the second direction; and

a scan controller that controls the scanning unit to scan the recording medium at a first scan speed except while the second detecting unit detects the actual discontinuous position, and to scan the recording medium at a second scan speed while the second detecting unit detects the actual discontinuous position, the second scan speed being slower than the first scan speed.

2. The discontinuous position detecting device as claimed in claim 1, wherein the second direction is opposite to the first direction.

3. The discontinuous position detecting device as claimed in claim 1, wherein the scan controller controls the scanning unit to scan the recording medium at the second scan speed in the second direction within a predetermined detection area including therein the actual discontinuous position and the temporary discontinuous position.

4. The discontinuous position detecting device as claimed in claim 3, wherein the recording medium further records thereon time information indicative of time of recording the recording contents.

5. The discontinuous position detecting device as claimed in claim 4, wherein the time information includes information on dates of recording the recording contents.

6. The discontinuous position detecting device as claimed in claim 4, further comprising:

a time information reader that reads the time information, and wherein the first detecting unit and the second detecting unit detect the temporary

discontinuous position and the actual discontinuous position, respectively, if the time information changes by at least a predetermined time difference.

7. The discontinuous position detecting device as claimed in claim 6, wherein the time information reader includes a time information storage unit that
5 stores the time information corresponding to the detected discontinuous position and a display that displays thereon the time information stored in the time information storage unit.

8. The discontinuous position detecting device as claimed in claim 6, further comprising:
10 a time difference setting unit that sets the predetermined time difference.

9. The discontinuous position detecting device as claimed in claim 3, wherein the first detecting unit detects a plurality of temporary discontinuous positions in a predetermined scan area, and the second detecting unit detects a
15 plurality of actual discontinuous positions, each of the plurality of temporary discontinuous positions corresponding to one of the plurality of actual discontinuous positions, and wherein the scan controller controls the scanning unit to scan the recording medium in the first direction throughout the predetermined scan area while the first detecting unit detects the plurality of temporary discontinuous positions, and
20 to scan the recording medium in the second direction throughout the predetermined scan area while the second detecting unit detects the plurality of actual discontinuous positions.

10. The discontinuous position detecting device as claimed in claim 9, wherein the scan controller controls the scanning unit to keep scanning at the second
25 scan speed, when any adjacent two temporary discontinuous positions are located in a vicinity of each other.

11. The discontinuous position detecting device as claimed in claim 3, wherein the recording medium further records thereon positional information indicative of a position on the recording medium, the discontinuous position detecting
30 device further comprising a positional information reader that reads the positional information.

12. The discontinuous position detecting device as claimed in claim 11, wherein the positional information reader has an positional information storage unit

that stores the positional information corresponding to the temporary discontinuous position.

13. The discontinuous position detecting device as claimed in claim 12, wherein the scan controller has a detection area setting unit that sets the predetermined
5 detection area based on the positional information corresponding to the temporary discontinuous position stored in the storage unit.

14. A method for detecting an actual discontinuous position between recording contents recorded on a recording medium, the method comprising:
scanning the recording medium in a first direction at a first scan speed;
10 detecting a temporary discontinuous position located in a vicinity of the actual discontinuous position, while scanning the recording medium in the first direction at the first scan speed;
scanning the recording medium in a second direction that is different from the first direction at the first scan speed up to a vicinity of the temporary
15 discontinuous position;
scanning the recording medium in the second direction from the vicinity of the temporary discontinuous position at a second scan speed, the second scan speed being slower than the first scan speed; and
detecting the actual discontinuous position, while scanning the
20 recording medium in the second direction at the second scan speed.

15. The method as claimed in claim 14, further comprising:
reading time information recorded on the recording medium indicative of time of recording the recording contents;
setting a predetermined time difference; and
25 detecting the temporary discontinuous position and the actual discontinuous position, if the time information changes by at least the predetermined time difference.

16. The method as claimed in claim 14, further comprising:
detecting a plurality of temporary discontinuous positions in a
30 predetermined scan area;
detecting a plurality of actual discontinuous positions, each of the plurality of temporary discontinuous positions corresponding to one of the plurality of actual discontinuous positions;

scanning the recording medium in the first direction throughout the predetermined scan area while detecting the plurality of temporary discontinuous positions; and

5 scanning the recording medium in the second direction throughout the predetermined scan area while detecting the plurality of actual discontinuous positions.

17. The method as claimed in claim 16, further comprising:

maintaining scanning at the second scan speed , when any adjacent two temporary discontinuous positions are located in the vicinity of each other.

10 18. A computer-readable medium storing a program for detecting a discontinuous position between recording contents recorded on a recording medium, the program comprising:

a program for scanning the recording medium in a first direction at a first scan speed;

15 a program for detecting a temporary discontinuous position located in a vicinity of the actual discontinuous position, while feeding the recording medium in the first direction at the first scan speed;

a program for scanning the recording medium in a second direction that is different from the first direction at the first scan speed up to a vicinity of the temporary discontinuous position;

20 a program for scanning the recording medium in the second direction from the vicinity of the temporary discontinuous position at a second scan speed, the second scan speed being slower than the first scan speed; and

25 a program for detecting the actual discontinuous position, while feeding the recording medium in the second direction at the second scan speed.

19. The computer-readable medium as claimed in claim 18, further comprising:

a program for reading time information recorded on the recording medium indicative of time of recording the recording contents;

30 a program for setting a predetermined time difference; and

a program for detecting the temporary discontinuous position and the actual discontinuous position, if the time information changes by at least the predetermined time difference.

20. The computer-readable medium as claimed in claim 18, further comprising:

a program for detecting a plurality of temporary discontinuous positions in a predetermined scan area;

5 a program for detecting a plurality of actual discontinuous positions, each of the plurality of temporary discontinuous positions corresponding to one of the plurality of actual discontinuous positions;

a program for scanning the recording medium in the first direction throughout the predetermined scan area while detecting the plurality of temporary discontinuous positions; and

10 a program for scanning the recording medium in the second direction throughout the predetermined scan area while detecting the plurality of actual discontinuous positions.

21. The computer-readable medium as claimed in claim 20, further comprising:

15 a program for maintaining scanning at the second scan speed, when any adjacent two temporary discontinuous positions are located in the vicinity of each other.

22. The discontinuous position detecting device as claimed in claim 1, wherein the recording medium is tape-shaped.

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